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# FALL WATER SUPPLY SUMMARY FOR NEVADA



PROCESSED BY SCS  
CURRENT SEASON REPORT

OCT 21 '76

U.S. DEPT. OF AGRICULTURE  
NATL. AG. EXP. STATION

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with  
NEVADA DEPARTMENT of CONSERVATION  
and NATURAL RESOURCES  
DIVISION of WATER RESOURCES

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF  
OCT. 1, 1976

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on a measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SURVEYOR ENROUTE TO THE MT. BALDY ARIZONA SNOW COURSE  
SCS PHOTO AZ-5460

### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 111, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



# **WATER SUPPLY OUTLOOK FOR NEVADA**

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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# WATER SUPPLY OUTLOOK FOR NEVADA

STREAMFLOWS PROVIDING NEVADA'S SURFACE WATER SUPPLY WERE NEAR MINIMUM FOR THE APRIL 1 TO JULY 31 PERIOD. LAKE TAHOE'S RISE WAS ONLY .21 FEET FOR APRIL 1 TO HIGH, ASSUMING GATE IS CLOSED.

STREAMFLOW ON THE SIERRA'S EASTERN SLOPE RANGED FROM 12 TO 35 PERCENT OF THE 1958-72 AVERAGE. THE HUMBOLDT RIVER AT PALISADES WAS 54 PERCENT. ONLY IN THE SNAKE RIVER TRIBUTARIES WAS STREAMFLOW ABOVE AVERAGE WITH 125 PERCENT ON THE OWYHEE RIVER AT OWYHEE.

RESERVOIR STORAGE WAS USED EXTENSIVELY AS A SUPPLEMENT TO THE LOW STREAMFLOWS. OCTOBER 1 STORAGE IS BELOW AVERAGE ON MOST RESERVOIRS EXCEPT RYE PATCH AND WILD HORSE.

Streamflows on Sierra streams ranged from 7 to 35 percent. The Truckee River at Farad was 22 percent while the East Carson and West Walker were 35 percent. The date of low flow on the East Carson was June 11 as compared to a July 20 average.

The Humboldt River flowed 54 percent at the Palisades Station. The North Fork and Marys River flowed 97 and 91 percent, respectively. The South Fork was only 73 percent. The Owyhee River was 125 percent.

A long period of below average precipitation caused streamflows to be lower than forecast.

Reservoir storage is below average in many cases with the exception of Rye Patch, Wild Horse and the Colorado River storage projects. Lahontan Reservoir contains 72,000 acre feet as compared to an average 120,000 acre feet and last year's 167,000 acre feet.

Topaz and Bridgeport Reservoirs are one-third of average.

Fall soil moisture conditions have improved because of above average precipitation during September. The upper soil layers now have above average soil moisture.

An above average snowpack is needed to insure average water supplies for next summer.





APRIL - JULY 1976  
NEVADA STREAMFLOW FORECASTS  
AND  
OBSERVED STREAMFLOW

The following table contains April-July forecasts made during the past winter. Observed streamflow quantities are provisional and were furnished by the U. S. Geological Survey.

FORECAST STREAMS	April - July Streamflow (Thousand Acre-feet)						
	Forecast				Observed	Average	Observed
	Feb.	Mar.	Apr.	May			1976 as
	1	1	1	1			% of 15-
	1976	1976	1976	1976	1976	1958-72	yr. Avg.
Little Truckee above Boca, CA <sup>1</sup>		50	33	28	16	89	18
Truckee at Farad, CA <sup>1</sup>		150	115	98	59	267	22
Lake Tahoe <sup>3</sup>		.75	.60	.31	0.21	1.46	14
E. Carson nr Gardnerville, NV (Date of 200 c.f.s. flow)		105 7/3	90 6/27	79 6/20	64 6/11	182 7/20	35 -
W. Carson at Woodfords, CA		42	25	23	17	52	33
Carson nr Carson City, NV		95	60	56	27	178	15
Carson nr Ft. Churchill, NV		75	50	42	12	159	7
E. Walker nr Bridgeport, CA <sup>2</sup>		30	22	18	8	68	12
W. Walker below Little Walker nr Coleville, CA	100	90	70	60	50	145	34
Lamoille Creek nr Lamoille, NV		24	25	24	24	28	86
South Fork Humboldt nr Elko, NV		58	50	48	48	66	73
Marys River above Hot Springs, NV		26	25	26	31	34	91
N. Fork Humboldt at Devils Gate, NV		30	26	24	31	32	97
Humboldt at Palisade, NV	170	150	125	126	105	193	54
Humboldt at Comus, NV		110	85	90	54	149	36
Martin Creek nr Paradise, NV		10	9	9	11	16	69
Owyhee nr Gold Creek, NV <sup>1</sup>	15	19	22	30	26	18	144
Owyhee nr Owyhee, NV <sup>1</sup>	58	69	68	90	85	68	125

1 Corrected for storage above station.

2 April-August flow, corrected for storage.

3 Maximum rise in feet from April 1, assuming gates closed.



# NEVADA STATUS OF RESERVOIR STORAGE

October 1, 1976

Basin and Stream	Reservoir	Usable Capacity (1,000 AF)	Usable Storage - 1,000 acre-feet			
			1976	1975	1974	15-year Average 1958-72
Owyhee	Wild Horse	72	44	62	50	18
Lower Humboldt	Rye Patch	172	108	142	106	89
Colorado	Mohave	1,810	1,721	1,385	1,384	1,402
Colorado	Mead	27,217	20,062	20,154	19,326	17,326
Tahoe	Tahoe	732	310	589	580	445
Truckee	Boca	41	30	37	39	14
Truckee	Prosser	30*	0	11	15	15**
Truckee	Stampede	220	58	148	193	Storage began 8/1/69
Carson	Lahontan	291	72	167	142	120
West Walker	Topaz	59	6	22	24	18
East Walker	Bridgeport	42	4	18	20	15

\* Flood control use allocation of 20,000 AF between November 1 and April 10.

\*\* Storage began 1/30/63

## SOIL MOISTURE

October 1, 1976

	Elevation	Profile Depth	(inches) Capacity	Date	Soil Moisture (inches)		
					This Year	Last Year	2 Years Ago
<u>East Slope Sierra</u>							
Independence Camp	7000	34	6.10	9/29/76	2.3	1.8	1.7
Marlette Lake	8000	50	3.70	9/29/76	1.2	1.8	1.2
Sonora Pass	8800	48	8.30	9/30/76	3.2	3.7	4.9
Virginia Lake	9200	40	5.00	9/30/76	1.6	2.2	2.9
<u>Humboldt Basin</u>							
Rodeo Flat	6800	42	11.00	9/14/76	7.5	3.0	4.8
<u>Owyhee Basin</u>							
Big Bend	6700	48	16.70	9/14/76	13.4	10.7	12.5
Taylor Canyon	6200	48	15.00	9/14/76	10.5	8.2	8.6



# PRECIPITATION (Inches)

BASIN AND PRECIPITATION GAGE LOCATION	ELEVATION	DATE OF READING	ACCUM. PRECIP. SINCE 5/1/76	ACCUM. PRECIP. SINCE 10/1/75
<u>LAKE TAHOE - TRUCKEE</u>			(ins.)	(ins.)
Echo Peak	7800	9/9/76	6.5	36.0
Fallen Leaf	6240	9/15/76	-	17.1
Independence Camp	7000	9/28/76	2.2	18.1
Independence Creek	6500	9/28/76	2.7	11.4
Marlette Lake	8000	9/29/76	5.8	19.7
Ward Creek #3	6750	9/28/76	7.2	45.9
Truckee #2	6400	10/1/76	3.7	13.2
Tahoe City Cross	6750	9/28/76	4.8	17.1
<u>CARSON RIVER</u>				
Ebbetts Pass	8750	8/24/76	6.7	28.9
Wet Meadows	8050	9/29/76	5.8	18.0
<u>WALKER RIVER</u>				
Sonora Pass	8800	9/30/76	5.2	22.2
<u>HUMBOLDT RIVER</u>				
Rodeo Flat	6800	9/14/76	5.0	24.0
Dorsey Basin	8100	9/21/76	8.5	*16.0
Green Mountain	8000	3/31 to 9/23/76	7.8	15.6
<u>OWYHEE RIVER</u>				
Big Bend	6700	9/14/76	4.0	19.5
Taylor Canyon	6200	9/14/76	8.5	18.0
<u>SNAKE RIVER</u>				
76 Creek	7100	9/24/76	3.1	18.5
Bear Creek	7800	9/24/76	10.7	33.1
<u>OTHER READINGS</u>				
Goat Creek	8800	7/27 to 9/24/76	5.9	
Pole Creek R. S.	8330	7/28 to 9/24/76	8.8	
Lamoille #3	7700	8/18 to 9/24/76	4.4	
Berry Creek	9100			
Jacks Peak	8420	7/29 to 9/14/76	5.4	
Jacks Creek, Upper	7250	7/28 to 9/14/76	4.8	
Virginia Lakes Ridge	9200	8/25 to 9/30/76	2.8	
* Since 2/23/76				





## Agencies Cooperating in Collecting Data Contained in this Bulletin

### FEDERAL

- Agricultural Research Service
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Geological Survey
- Navy
- Soil Conservation Service
- U. S. District Court - Federal Water Master
- NOAA, National Weather Service

### STATE

- California Cooperative Snow Surveys
- California Department of Parks and Recreation
- California Department of Water Resources
- Colorado River Commission of Nevada
- Idaho Cooperative Snow Surveys
- Nevada Association of Conservation Districts
- Nevada Department of Conservation & Natural Resources
  - Division of Water Resources
  - Nevada State Forester
- Oregon Cooperative Snow Surveys
- Utah Cooperative Snow Surveys
- White Mountain Research Station, Univ. of California

### PRIVATE

- Amalgamated Sugar Company
- Kennecott Copper Corporation
- Nevada Irrigation District
- Owyhee Project North Board of Control
- Owyhee Project South Board of Control
- Pacific Gas and Electric Company
- Pershing County Water Conservation District
- Sierra Pacific Power Company
- Truckee-Carson Irrigation District
- Walker River Irrigation District
- Washoe County Water Conservancy District

Other organizations and individuals furnish valuable information for the snow survey reports. Their Cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

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